

King County Solid Waste Division



2002
**Annual
Report**



King County

Department of
Natural Resources and Parks
Solid Waste Division



Letter from the Solid Waste Advisory Committee

The Solid Waste Advisory Committee represents a diversity of interests including citizens, local elected officials, the waste management industry, labor, business and the recycling industry. Members work together to ensure that all voices and views are heard and incorporated into our comments and recommendations. It is our goal to assist the County in ensuring that solid waste is handled in the most environmentally responsible way while providing the residents of King County with the highest level of service at the most competitive rates.

SWAC Members

- Carolyn Armanini
- William A. Beck
- Robert Beckwith
- Stephanie Fenton-Delaurenti
- Don Freas
- Steve Goldstein, Vice-Chair
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- Shirley Shimada, Chair
- Judy Stenberg
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Over the last year the Solid Waste Advisory Committee provided feedback on a variety of waste reduction and recycling programs, including the Computer Recovery Project, the Household Organics Program and transfer station recycling. We also considered and provided input on debris management, the Landfill Gas-to-Energy Project and the Solid Waste Division’s annual budget. Additionally, the Solid Waste Advisory Committee devoted many meetings to reviewing and commenting on the 2001 Comprehensive Solid Waste Management Plan (Plan) as it was being developed.

We are delighted that the County and the cities have adopted the Plan and the Washington State Department of Ecology approved it. Now the Solid Waste Advisory Committee looks forward to providing input on the implementation of the recommendations contained in the Plan.

Sincerely,

Shirley Shimada, Chair
Solid Waste Advisory Committee

Steve Goldstein, Vice-Chair
Solid Waste Advisory Committee

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Introduction

Each day the Solid Waste Division operates waste transfer and disposal services for all of King County except the cities of Seattle and Milton. We also work to increase the amount of materials that are recycled or reused. Funding for all the Division's services comes from tip fees—the cost of disposal that self-haul customers and commercial haulers pay at transfer stations and the landfill.

This Annual Report details our major activities from July 1, 2001 through June 30, 2002. The timeframe of the report is in accordance with King County Code 10.14.080 that requires the Division to submit an annual report to the King County Council each September.

The past year has been productive for the Division in a number of areas. One of the year's major milestones came in October of 2001 when the King County Council gave its final approval to the 2001 Comprehensive Solid Waste Management Plan. Next, it was sent to the cities for their approval. By the end of the adoption period in March 2002, 28 of the 37 cities also adopted the Comprehensive Plan. The Washington State Department of Ecology approved the Plan in May 2002.

The Plan details the overall strategy for

managing King County's garbage and recycling services for the next 20 years. The Plan will steer the region through many significant changes in solid waste management, including the closure of the last active landfill in King County. The Division worked closely with the cities, haulers, and residents to develop the Plan.

The major recommendations in the Plan include:

- Use the Cedar Hills Regional Landfill for solid waste disposal until it reaches its permitted capacity and closes in approximately 2012, then begin exporting waste to a landfill outside of King County;
- Upgrade the transfer system to meet regional demands for capacity and service, and prepare for waste export;
- Continue to identify and implement aggressive and cost-effective strategies that reduce the amount of waste requiring disposal; and
- Maintain low, stable disposal rates over the next 20 years.

The King County Solid Waste Division Mission Statement:

To protect human health and the environment by providing quality services that responsibly manage the County's solid wastes.

ADOPTED





Our Waste Reduction and Recycling section continues to build on past successes, and has implemented several new and improved programs this year. The pilot residential food waste recycling program and compost promotion are efforts to reduce the amount of organic

New Food Recycling

materials that are landfilled. Staff is participating in efforts at the statewide and regional levels to develop a system to recycle electronic

components and to reduce the levels of mercury released to the environment. Programs such as the Wastemobile and Special Recycling Collection events continue to serve and educate residents of the County.

Environmental stewardship is a large part of what we do. The Division is committed to developing an environmental management system to help us minimize our impacts on the environment. We have a new initiative to help rehabilitate properties that have been contaminated with hazardous and solid wastes. We have also taken the lead on helping residents to get rid of junk vehicles. The service that we provide helps residents to obtain the documentation that they need to dispose of unwanted junk vehicles.




The Division has also been focusing on becoming more efficient in the way we work. Through the on-going Competitiveness Project, three different teams evaluated selected work processes to determine how they could be done more effectively. Recommendations from the teams are now being implemented.

As a part of the Division's ongoing effort to provide the highest level of customer service, we began accepting credit and debit cards at all of our transfer stations. Although integrating credit and debit cards into our system took a



good deal of preparation, it has been well worth the effort. Customer response to the change has been overwhelmingly favorable. Approximately one-fifth of our customers now choose to pay with a credit card. This is just one example of the Division's emphasis on continual improvement of customer service and efficiency.

In order to ensure customer and employee safety, a number of projects have been undertaken at our transfer stations. Scale houses were replaced at both the First Northeast and Bow Lake Transfer Stations. Major planning and preparation has taken place to prepare for upcoming projects including a roof replacement at Algona.

The following report details the highlights of the past year. 

Waste Reduction, Recycling and Market Development

The Waste Reduction and Recycling section of the King County Solid Waste Division works to cost-effectively reduce the amount of material entering the waste stream. Their mission is to conserve resources, protect the environment, reduce the costs of solid waste management for King County residents and strengthen the County's overall economy. In order to fulfill this mission, the section continues to broaden its focus and help the public understand that waste reduction and recycling reaches beyond curbside pick-up of glass, aluminum and paper.

The recently adopted 2001 Comprehensive Solid Waste Management Plan provides for new initiatives to build on existing programs. The Plan outlines ways to increase recycling; divert more organic materials from the landfill; and expand the awareness, support and marketing of waste reduction and recycling. We identified that we can achieve these goals by: enhancing existing programs; working to increase the demand for recycled and reused products; integrating our programs with other resource conservation activities; promoting product stewardship; and supporting efforts to construct environmentally-friendly buildings.

In 2001, the Waste Reductions and Recycling section restructured into four work teams: organics and soils, materials management (including collection), sustainable development, and education and outreach. Several programs from the Washington State University Extension were integrated into the Waste Reduction and Recycling section. The newly integrated programs include: the Master Recycler/Composter program; onsite manure management; hazardous waste education for youth; and the community demonstration gardens program.

A variety of the section's noteworthy programs are detailed below.

Residential food waste recycling pilot program

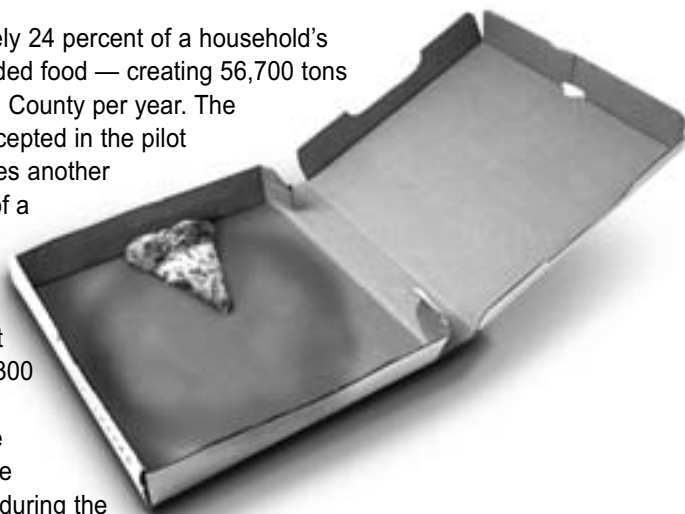
Nearly 1,700 single-family households in Kirkland, Issaquah, Lake Forest Park and Redmond are taking part in a pilot program to

recycle food waste and food-soiled paper.

Participants separate their organic waste from the rest of their garbage and put it out with the yard waste. Their garbage hauler then collects and delivers the organic wastes to a permitted facility where it is made into compost — a natural, organic material suitable for gardening.

The pilot project is examining two different collection schedules — the organic wastes will be picked up once a week and once every other week, depending upon the neighborhood. The purpose of the project is to test the feasibility of collecting residential food waste, to assess the public's willingness to participate in food waste recycling and to identify any public health issues. The project runs from April 2002 through January 2003.

Approximately 24 percent of a household's refuse is discarded food — creating 56,700 tons of waste in King County per year. The soiled paper accepted in the pilot project comprises another seven percent of a household's waste or 16,000 tons per year. We expect that more than 300 tons of organic materials will be diverted from the regional landfill during the eight-month pilot program.



Fall compost promotion

In September 2001, the Solid Waste Division teamed up with Seattle Public Utilities and 19 nurseries and garden centers throughout King County to promote the benefits of compost. Organizers of the fall compost promotion encouraged the use of compost to build healthy soil, reduce dependence on fertilizer and



pesticides, and reduce the need for watering, while improving the health and vitality of lawns and gardens. As an incentive to try compost, participating retailers sold it at a savings of up to 30 percent and provided residents with educational information about the importance of healthy soil.

The results of the first-time program were impressive. The promotion successfully encouraged residents to purchase compost and educated them about the value of organic-rich compost for soil, water conservation and plant health.

Participating retailers had an average sales increase of 350 percent on the discounted compost (during the month of the promotion as compared to the same month the previous year).

Product stewardship for electronic waste

In 2000, King County began to address electronic waste by starting the Computer Recovery Project. The Division, in partnership with private sector organizations, provides residents reuse and recycling options for electronic equipment. Despite the success of this program, disposal of old printers, fax machines, copiers, televisions, and computers continues to be a problem inside and outside of our borders.

The King County Solid Waste Division is working to address electronic waste on a local, state and national level by promoting responsible product stewardship of these items. Product stewardship is a management strategy that means the entity that designs, produces, sells or uses a product takes responsibility for minimizing its environmental impact throughout all stages of the item's life cycle.

Division staff are working to develop consistent product stewardship solutions for electronic scrap through our participation in both national and regional coalitions. Since April 2001, King County has been working with a variety of stakeholders to develop a voluntary national product stewardship system that includes a viable financing mechanism

to maximize the collection, reuse and recycling of used electronic products. The product stewardship system will include incentives to design products that result in less waste, are more readily reused and recycled, contain less toxic materials and are made with recycled materials. The discussions will also address environmentally sound recycling practices and issues surrounding the export of electronic scrap for recycling. The specific products being addressed are televisions, computer monitors, central processing units and computer peripherals, such as printers and scanners.

Efforts to reduce mercury in the environment

The health and environmental risks of mercury are a growing concern. Exposure to mercury – most often from eating contaminated fish – can result in serious health problems that affect the brain, kidney, liver and central nervous system. Through the Local Hazardous Waste Management Program (LHWMP), Division staff members are addressing the concerns associated with mercury. Activities include:

- Participating on the Washington State Department of Ecology committee that is developing a mercury chemical action plan. The plan will outline a strategy to reduce mercury exposure and provide recommendations for further action;
- Coordinating the Northwest Product Stewardship Council's Mercury Sub-Committee. The Northwest Product Stewardship Council is a group of government agencies working with businesses and non-profit organizations to integrate product stewardship principles into the policy and economic structures of the Pacific Northwest;
- Working with industry to promote manufacturer take-back programs, such as the Thermostat Recycling Corporation (TRC) program that collects used thermostats; and
- Organizing two pilot projects that educate residents about the environmental and health risks of mercury as well as provide them the opportunity to exchange mercury fever thermometers for mercury-free thermometers.

LinkUp

LinkUp helps to complete the recycling loop by collaborating with manufacturers to use more recycled materials in their products. LinkUp is a program that provides customized technical and marketing expertise at no cost to eligible manufacturers. The program expands the use and market for products made with recycled materials, which ultimately conserves precious natural resources and protects the environment. This year, LinkUp focused on partnering with companies that utilize hard-to-recycle materials, including glass, plastics, wood, textiles, concrete and asphalt.

The LinkUp program, in its third year, boasts impressive results for its partners, including:

- A survey of LinkUp partners conducted in 2001 found that companies experienced increased sales, improved customer awareness and heightened product visibility because of their participation in the program;
- U.S. Cold Patch increased by 300 percent the amount of recycled asphalt used in their product; and
- National media coverage focusing on TriVistro's tumbled glass products reached 1.8 million readers and generated increased product sales and inquiries from around the nation.

Sustainable development and the Executive's Green Building Initiative

Green or sustainable building takes into account the long-term impacts of a building or development on its occupants and the environment. It requires buildings and landscapes to incorporate energy efficiency, water conservation, waste minimization, pollution prevention, resource-efficient materials and indoor environmental quality.

Institutional and Commercial Building

King County Executive Ron Sims signed the Green Building Initiative in November 2001. The Initiative calls for all of King County's construction projects to incorporate sustainable building in their planning, design and construction. The Initiative specifically names the Leadership in Energy and

Environmental Design (LEED™) as the County's green building standard. The Solid Waste Division facilitates an in-house "Green Team™" that provides project teams with expertise and advice on green building. To help kick-off the Green Building Initiative, the Green Team sponsored an advanced LEED™ training for 25 King County capital project managers in July 2001.

The Division also partners with professional trade organizations including the Association of General Contractors (AGC), American Institute of Architects (AIA) and the US Green Building Council to promote green building to the private sector.

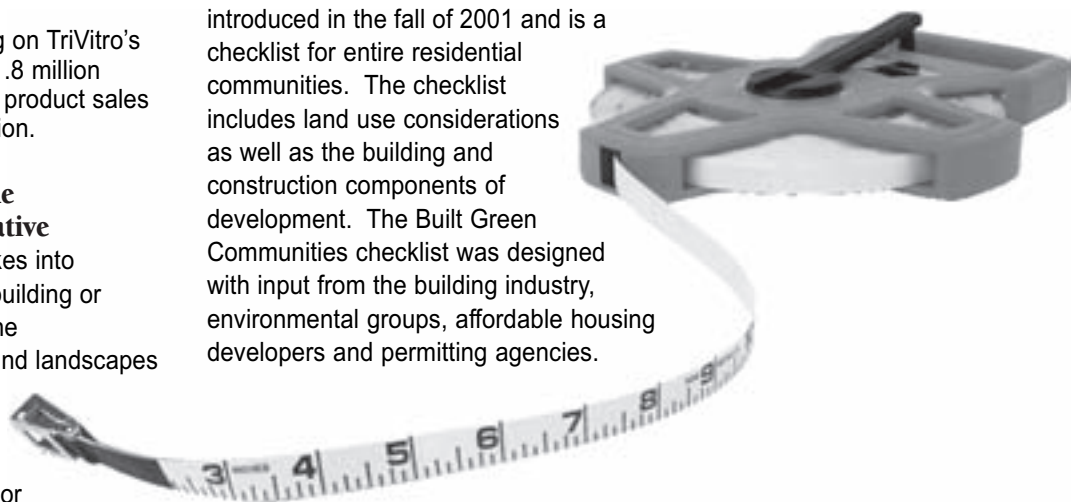
Residential Building

On the residential side, the Division continued to partner with the Master Builder's Association and Snohomish County to sponsor the Built Green Program. A new component of the Built Green Program called Built Green Communities was developed in 2001. This program was formally introduced in the fall of 2001 and is a checklist for entire residential communities. The checklist includes land use considerations as well as the building and construction components of development. The Built Green Communities checklist was designed with input from the building industry, environmental groups, affordable housing developers and permitting agencies.

Technical Assistance for BuildGreen and LEED™

The Division also worked to increase the public's awareness of sustainable building through a number of outreach efforts. These efforts include:

- Updating and distributing the 2001-2002 *Construction Recycling Directory* and *The 2002 Contractors Guide*;



- Organizing a *Green Building Forum for Municipalities* to educate municipalities about the cost and resource savings of green building. The May 22, 2002 event drew representatives from ten cities, a non-profit organization and a community college;
- Displaying the Built Green Kitchen at the Home Show and Home Show 2; and
- Producing a video about Built Green, in conjunction with Salmon TV, a public service TV program. The video has aired on PBS, cable and municipal television stations.

Awards

Several Waste Reduction and Recycling programs received awards in the last year. Award winning programs not previously highlighted include:

The Junk Mail Reduction Campaign

- ★ Public Education Award—Bronze
Solid Waste Association of North America

Waste Free Holidays

- ★ Totem Award for Special Publications—Advertising and Public Service—Partnerships
Public Relations Society of America, Puget Sound Chapter

Waste Reduction and Recycling School Program

- ★ Organizational Excellence
Environmental Education Association of Washington

Sustainable Landscaping

- ★ Sunset Magazine Western Living Award
Sunset Magazine
- ★ Gold Medal
Northwest Flower and Garden Show

Fall Compost Promotion

- ★ Totem Award for Marketing Communications—Consumer Products Division
Public Relations Society of America, Puget Sound Chapter

Program Name	Intent of Program	Results
Collection Programs		
Christmas Tree Recycling	For two weekends, residents bring their Christmas trees to be recycled. The trees are turned into chips and mulch.	Collected approximately 65,000 Christmas trees (or 650 tons) at the 11 drop-off sites distributed throughout King County.
Curbside Recycling	Through an outreach campaign primarily focusing upon single and multifamily residents, the Solid Waste Division raises awareness of the fundamentals of recycling properly.	Delivered 71,000 educational brochures that help residents understand curbside collection; how to sign up for curbside recycling and yardwaste service; and what to do with yardwaste.
Household Hazardous Wastemobile	The Wastemobile is a service of the LHWMP administered by the Solid Waste Division. The program enables residents to properly dispose of items such as pesticides, paints, cleaning products, and fluorescent light bulbs.	Collected 920 tons of moderate risk waste from 20,012 cars in 2001.
Special Recycling Events	The Division and cities hold events to collect and recycle unwanted items including tires, wood, scrap metal, computers, televisions and refrigerators.	In 10 unincorporated area events, 753 tons were collected from 4,651 vehicles. In 46 city events, 2,342 tons were collected from 19,566 vehicles.



Program Name	Intent of Program	Results
Sustainable Building Programs		
Reusable Building Materials Exchange	The program provides an Internet-based exchange of used building materials for homeowners and contractors to post listings of used or surplus materials.	One of King County's most frequently visited Web sites, RBME receives approximately 3,000 visitors a month.
Education and Outreach Programs		
Backyard Compost Bin Sales	To encourage backyard composting and waste reduction, the Division (in partnership with the City of Seattle) offers compost bins at a deeply discounted price.	More than 4,700 compost bins were sold at four sales events. The bins will be available at a discounted price via the Internet through the end of 2002.
Junk Mail Reduction	The U.S. Postal Service delivers more than 90 billion pieces of direct mail every year. A significant portion of this advertising mail is unwanted, or "junk" mail. Division programs help both residents and businesses reduce their junk mail, by getting off mailing lists and other measures.	The Division's "Reduce Business Junk Mail" website, the only one of its kind, has attracted national attention, and received more than 8,000 hits in the past year. The Division also distributed more than 4,000 "Reduce Junk Mail" flyers to residents, and got several thousand hits on that website.
Green Works	Green Works is a business assistance and outreach program. Division staff provide businesses with information and assistance to help establish or improve their waste reduction and recycling programs.	More than 500 businesses received technical assistance in the last year.
Education and Outreach Programs		
Master Recycler/Composter (MRC)	The program trains volunteers on waste reduction, recycling and composting, in exchange for 40 hours of volunteer time in the community.	Twenty-six residents completed the MRC training in 2001. MRCs donated more than 850 hours to the community.
Medical Waste Prevention Roundtable	The program brings together professionals in the medical industry who are interested in exchanging ideas and working to develop new ways of preventing and reducing waste.	Representatives from approximately one-third of the regional hospitals attended seminars on how to better manage medical wastes and how to measure waste prevention efforts.
Northwest EnviroExpo	The Northwest EnviroExpo provides residents a one-stop opportunity to see and learn about practical products that conserve resources.	An estimated 30,000 people visited the EnviroExpo and had the opportunity to get information about resource conservation from our booth.
Northwest Flower and Garden Show	The Division worked with designers to help them incorporate recycled and reused materials into their display gardens.	Ten of the 27 display gardens included recycled or reused materials. The Northwest Flower and Garden Show drew 80,605 attendees.

Program Name	Intent of Program	Results
Education and Outreach Programs (Continued)		
Northwest Natural Yard Days	The program informs residents of the benefits of natural yard care practices such as mulch mowing, conserving water, using compost and organic slow-release fertilizer, and hand weeding. The Division and 36 agencies partnered to encourage natural yard care by making dozens of items available at deep discounts throughout the month of April.	Residents purchased 41,000 bags of compost, 2,177 mowers and 2,073 soaker hoses. The one-day sales event at the Seattle Center was so well attended that they sold out of almost every natural yard care item on-hand.
Assistance on School Projects	Schools get help designing and carrying out a resource conservation project.	Seven schools received direct assistance and seven additional schools received funding.
School Program	Young children learn the concepts of recycling and reducing waste through storytelling and drama.	The Preschool Program presented 125 storytelling sessions for 2,800 students.
	Resource conservation messages are taught through an assembly program, classroom workshops and formation of Green Teams.	The Elementary School Program presented assemblies to 60 schools for 25,000 students, 175 classroom workshops for 4,800 students and supported 34 registered Green Teams (475 students).
	Middle and high schools get classroom workshops based on the Department of Natural Resources and Parks' television show Natural Connections.	162 workshops were delivered to 26 schools and 4,300 students.
Household Hazardous Waste (HHW) Teacher Training Program	Teachers learn to use the Hazards on the Homefront guide, and receive follow-up support through classroom presentations. Parents of young children also receive presentations about HHW.	65 teachers were trained, there were 30 follow-up classroom presentations and 3 presentations were made to Program for Early Parent Support groups.
Recycling Program Technical Assistance	Schools, upon request, are provided assistance in setting up or improving recycling programs.	Eight schools received assistance in identifying ways to improve recycling and waste reduction.
WasteBusters Program	Middle and high schools receive classroom workshops on recycling, waste reduction, and resource conservation.	482 workshops were delivered to 36 middle schools and 7,900 students. 41 workshops were delivered to 14 high schools and 800 students.
Small Farm Expo	Livestock and small farm owners are provided with tips and technical assistance about environmentally responsible farm management practices.	More than 150 people attended the event and the educational seminars.
Waste Free Holidays	The holiday program encourages people to give gifts of experience rather than "stuff" that creates unnecessary waste. Businesses participate by offering discounts on items such as tickets, lessons, meals and outdoor adventures.	The program's Web site received more than 12,000 visitors. Over 80 businesses participated.

Environmental Stewardship

Protecting the environment is an integral part of the Solid Waste Division's mission. The Division operates a number of pro-active programs to clean up, restore and preserve our environment.

Community Litter Cleanup Program

The Solid Waste Division's Community Litter Cleanup Program cleans litter and illegal dumpsites on public lands and waterways in King County. The program operates on funding from the Washington State Department of Ecology and Solid Waste Division resources.

In 2001, crews cleaned up approximately 160 tons of debris from 58 sites. More than 50 percent of the debris was recycled – items included tires, appliances, and junk vehicles.

Junk Vehicle Service

Thousands of abandoned or "junk" vehicles lie rusting in yards, ravines, parking lots, and open spaces. These vehicles are eyesores that damage the environment and attract more illegal dumping. As property owners quickly find out, the process of removing an abandoned junk vehicle is not as simple as calling a tow truck to haul it away. To help King County residents, the Division launched a new service to assist property owners with two critical steps in the junk vehicle removal process. The Division took on this task because budget cuts meant that many of the agencies that traditionally provided the service could no longer do so, yet the problem was not going away.

When a property owner calls for assistance, Division staff inspect the vehicle on-site to determine whether it meets the legal definition of a "junk vehicle." For a vehicle to legally be considered "junk", the law requires it meet at least three of the following conditions:

- it is three years or older;
- it is extensively damaged;
- it is apparently inoperable; or
- the "Fair Market Value" is equal only to the approximate value of the scrap in it.

If the vehicle meets the criteria, staff can then complete a Junk Vehicle Form, which, in many cases, serves as the vehicle's title. Once there is a title (or a completed Junk Vehicle Form), the vehicle can legally be removed from the property. The Division does not remove the car – that is the responsibility of the property owner.

More than 400 residents inquired about the program since it began in February 2002. Of those calls, 230 required assistance with junk vehicles. As of the end of June 2002, 165 site visits have been completed, resulting in a total of 300 cars that can now be removed from their current locations.

Gas to Energy Project

The Division owns and operates the Cedar Hills Regional Landfill, the only active landfill in King County. Each day it generates approximately 14 million cubic feet of landfill gas – enough to fuel a 22- to 26- megawatt power generation facility that could produce the energy to power about 16,000 homes. The landfill gas, produced by the anaerobic decomposing of organic wastes, consists of methane, carbon dioxide, and trace amounts of other compounds. The gas at Cedar Hills is currently collected using a series of wells, trenches, and piping, and then it is burned off using a system of flares.

In October 2001, a Request for Proposals was issued to solicit plans from parties who wanted to purchase the landfill gas and turn it into usable power. Six proposals were submitted and evaluated on their environmental performance, community impact and mitigation plans. The companies were also evaluated on their financial resources, technical expertise, experience,



safety record, and the price they would pay for the gas. Following careful review of the proposals, the Division entered into negotiations with one company. If negotiations are successful, the company will purchase the County's landfill gas and then build and operate a plant to convert the gas into energy. They will then sell the electricity generated from the landfill gas. The facility could begin generating electricity by late 2004 or early 2005.

The Solid Waste Division held the first of several open house meetings to discuss the project with landfill neighbors. Additional outreach efforts, including a mail-in survey, helped the Division to understand the public's hopes and expectations for the project. There has been a high level of support for the project from the public and regulators



Contaminated Sites Cleanup Program

This year, a coordinated Contaminated Sites Management Program was initiated. The program's purpose is to provide assistance with assessment and cleanup issues at brownfields and related sites. The term brownfields refers to abandoned, idled or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. The Contaminated Sites Management Program services will be directed at controlling environmental hazards and returning properties to productive uses. The objectives are to enhance the environment, provide for increased employment, reuse urban land, and add to the County's financial resources through increased sales of surplus property and revenues from property and sales taxes.

The Contaminated Sites Management Program consists of the following three elements: site investigation and remediation services; King County/City of Seattle Brownfields Program; and illegal drug lab cleanups. Each of these initiatives is detailed below.

Site Investigation and Remediation Services

King County has a number of different land interests that can be complicated by contamination issues. They include: County-owned or tax delinquent surplus properties that have contamination issues; County-owned properties under active use; and properties that the County may want to acquire that have contamination issues that need to be addressed before their purchase is completed. In such cases, the County would request site investigation and remediation services before making any decisions about the property.

Program assistance starts with a site investigation. This typically includes sampling soils and other environmental media. The County is able to market surplus or tax-delinquent property at a higher value once the degree of contamination is adequately defined and a cleanup plan is implemented.

The Site Investigation and Remediation Services element is funded through a combination of sources, including direct reimbursements (e.g., proceeds from property sales), Environmental Protection Agency grants, and state grants (Site Remediation Grants, Coordinated Prevention Grants). The Solid Waste Division also provides initial funding and staff resources for these activities.

Brownfields

The joint King County/City of Seattle Brownfields Program assists local businesses and others to assess, clean up, and redevelop underutilized brownfield sites. It is entirely funded



by a grant from the U.S. Environmental Protection Agency. The County contracts with the nonprofit Environmental Coalition of South Seattle (ECOSS) to provide free technical assistance and access to resources for brownfields cleanup and redevelopment. In addition, the County works with ECOSS to provide in-depth assistance to individual sites beyond the initial assessment phase

Illegal Drug Lab Cleanups

In cooperation with Public Health – Seattle and King County, the Solid Waste Division manages emergency control and decontamination efforts at illegal drug labs where the property owner is unwilling or unable to comply with cleanup orders. The Local Hazardous Waste Management Program (LHWMP) approved a two-year Illegal Drug Lab Abatement Fund that will help the County meet the increasing demands of illegal drug laboratories. The number of illegal drug labs and related dumpsites that the Washington State Department of Ecology responded to in King County increased from 10 in 1995 to 231 in 2000. ■■■■

Facility Improvements

The Solid Waste Division operates King County's transfer and disposal system. The system is comprised of a regional landfill; eight transfer stations, and two rural drop boxes that serve residential and non-residential self-haul customers and commercial waste haulers.

For the past several years, the Division has focused on safety improvements at our transfer facilities. Now, the focus is shifting toward major capital projects to upgrade our transfer stations and prepare the system for eventual waste transport.

From July 1, 2001 through June 30, 2002, a total of 16 capital improvement and asset maintenance projects were completed. All of the projects were planned and implemented to cause the least amount of service disruption for our customers. This year, none of the projects required that the transfer station close during construction.

These facility improvement projects included:

- Implementation of the First Northeast Facility Master Plan began. First, the scalehouse was replaced. Then, the design-phase was completed for a ramp that would give King County transfer trailers direct access to the station from I-5. If County transfer trailers are allowed to use the ramp, they could avoid local surface roads and reduce their effect on traffic. The ramp is currently used solely by Metro Transit. Although design is complete, approval to use the ramps is still pending from federal and state agencies.
- Design for the roof replacement project at the Houghton Transfer Station is 90 percent complete. Pending permit approval, the project will begin in spring 2003.
- A number of major projects were completed at the Bow Lake Transfer Station. Work included installation of a new scalehouse and an



appliance recycling area. Also, a new back-up generator was installed in case of power outages, and a number of additional safety improvements were made.

- Preparation for the roof replacement at the Algona Transfer Station occurred throughout the year. A ten-week station closure is scheduled beginning in September 2002 in order to replace the roof, scalehouse, and to add a new self-haul recyclables collection area.
- The Skykomish Drop Box and Recycling Station was automated to collect fees for solid waste disposal – previously there was no charge for disposal at the drop box. Automating the site proved to be the best way to control access and collect revenue for the service. Customers gain access to the drop box with a credit card or a single use card that can be purchased at a nearby store, at the Skykomish Town Hall, or by mail.
- Many sites required repair because of damage from the February 2001 Nisqually Earthquake. The Enumclaw Transfer Station and at the Cedar Hills Landfill shop suffered the most extensive damage.

Credit and Debit Card Acceptance at all Facilities

In an effort to improve customer service and convenience, the Division began accepting Visa and Mastercard credit and debit cards at all of our facilities in October 2001. This service improvement also reduced the number of “non-pay” transactions by 70 percent. A “non-pay” occurs when a customer does not bring enough money to cover the cost of the transaction.

Implementation required careful planning, including designing computer software to interface with the existing cashing system. Use of credit and debit cards was phased in at the transfer stations so the Division could work out any start-up problems with minimal inconvenience to our customers. By May 2002, 21 percent of payments that would have been by cash or check were being made with a credit or debit card instead.

Environmental Monitoring

The Solid Waste Division conducts extensive environmental monitoring at the Cedar Hills Regional Landfill and the closed landfills it maintains. The monitoring is designed to detect and assess environmental impacts of site activities and to ensure the effectiveness of our environmental control systems.

Monitoring activities at the Cedar Hills Landfill include sampling and analysis of water from 46 groundwater wells, four domestic water supply wells, nine surface water stations and four wastewater stations. Additional depth-to-groundwater and surface water flow data are collected from eight wells and 13 surface water-gauging stations. Approximately 53 gas probes are also monitored at the Cedar Hills Landfill.

The Division has custodial responsibility for ten closed landfills within King County - Bow Lake, Cedar Falls, Corliss, Duvall, Enumclaw, Hobart, Houghton, Puyallup/Kit Corner, South Park, and Vashon. The Division's primary responsibility is environmental monitoring of groundwater, surface water, wastewater and landfill gas. We also maintain the landfill's cover and manage landfill gas and wastewater. Tests at more than 100 groundwater, surface water, and wastewater monitoring stations and approximately 100 gas-monitoring sites are conducted throughout the year.

Data from both Cedar Hills and the closed landfills are reported to the Washington State Department of Ecology and Public Health - Seattle and King County. Data from Cedar Hills are also summarized in reports to the U.S. Environmental Protection Agency. These reports are available to the public at King County Public Libraries. ■



Competitiveness Program

Finding innovative methods to operate more efficiently is nothing new to the Solid Waste Division. The Division has always worked to improve our operations – often based upon employees' suggestions. The process was formalized in May of 2000, when the Competitiveness Program was launched to enhance our efforts and to help us:

- become more competitive in the changing marketplace;
- focus more directly on finding and taking advantage of improvement opportunities; and
- learn more about measuring and tracking our performance as a division.

This year the Competitiveness Program focused upon process mapping. Process mapping is a tool that allows us to methodically examine all of the steps and actions needed to complete a given activity. The purpose of such careful examination is to better recognize weaknesses in our process, single out systems or policies that make tasks more difficult than necessary, and recognize areas that can be improved. Using process mapping on several of our internal processes has resulted in improvements that will continue to pay off in the years to come, saving time and resources.

Saving Resources - Water and Electricity

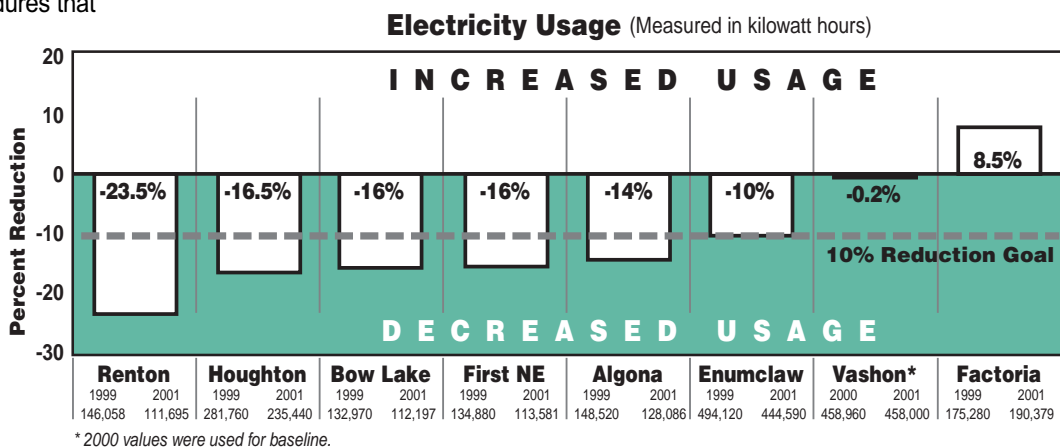
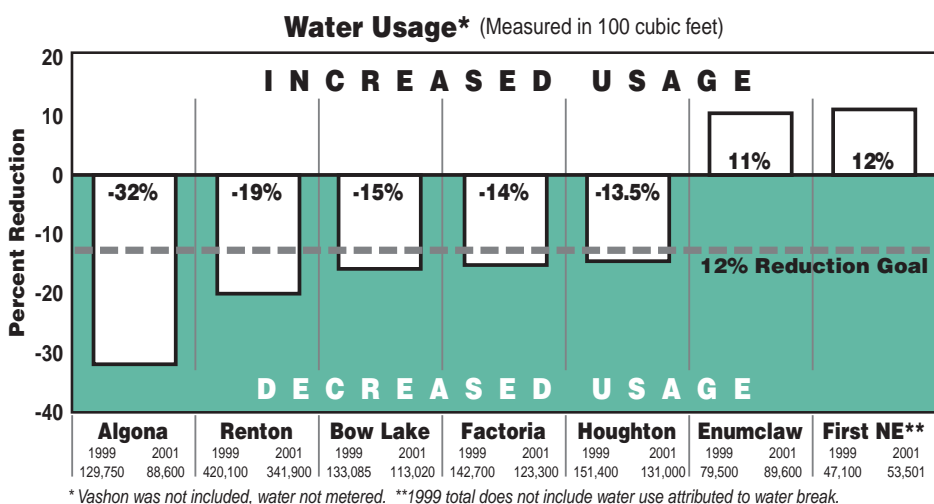
Every day, Solid Waste Division employees make decisions that effect the environment, whether it is managing a complex landfill system, driving a garbage transfer trailer, or ordering office paper. The Environmental Awareness Program (EAP) is an employee team working to develop an Environmental Management System, which is a set of processes and procedures that help analyze, control, and reduce the impact we have on the environment. A successful Environmental Management System can also help the organization improve operational efficiency and reduce costs.

Along with 14 other municipalities, the Division took part in a two-year pilot project sponsored by the U.S. Environmental Protection Agency program that provided us

Solid Waste Division Programs

with technical assistance and guidance in developing our Environmental Management System. The pilot project, which concluded in March 2002, provided valuable information, training and guidance for the EAP team.

Over the past year, the EAP team has been talking with all of the work groups in the Solid Waste Division about our adopted environmental objectives and targets. Employees were asked to make commitments to do what they can on the job to protect the environment. One example of an objective is to increase efficiency and conservation of energy and water. The target is to reduce consumption by 10 to 12 percent each year. The Environmental Awareness team is tracking these efforts to save water and electricity and will continue to monitor our use. Graphs of the savings in 2001 are shown below.





Planning for the Future

Waste Export

The newly adopted 2001 Comprehensive Solid Waste Management Plan states that the County will export waste outside of King County when the Cedar Hills Regional Landfill closes. The landfill is expected to reach its permitted capacity around 2012.

The Division has conducted a number of comprehensive economic analyses to explore the cost of waste export versus the continued use of the Cedar Hills Landfill. The research has consistently found that early closure of the landfill would be costly to ratepayers because of the price of long-haul transport (which is necessary for waste export). For example, if Cedar Hills were to be closed in 2005 instead of 2012, the additional cost to the ratepayers for disposal would be over \$100 million. These analyses have also shown that exporting a portion of King County's waste in order to extend the life of the landfill is not cost-effective.

As directed by the County Council, the Solid Waste Division continues to monitor waste export prices and the availability of landfill space. Landfill prices in the region have been declining since we began tracking them in the early 1990's. At that point, contracted disposal prices at landfills in the Northwest were between \$23 and \$26 per ton (excluding transport costs). As waste export activity increased during the

decade, disposal prices declined.

Today, contracted disposal prices at

the Roosevelt and

Columbia Ridge landfills are less than \$20 per ton.

Our research on landfill capacity in the region shows that there are several large landfills within a reasonable distance that are available to handle King County's waste when

the time comes to export. There is sufficient landfill space available here in the Northwest - Roosevelt Landfill in Washington and Columbia Ridge and Finley Buttes Landfills in Oregon - as well as easily accessible landfills in Idaho, Utah, and California.

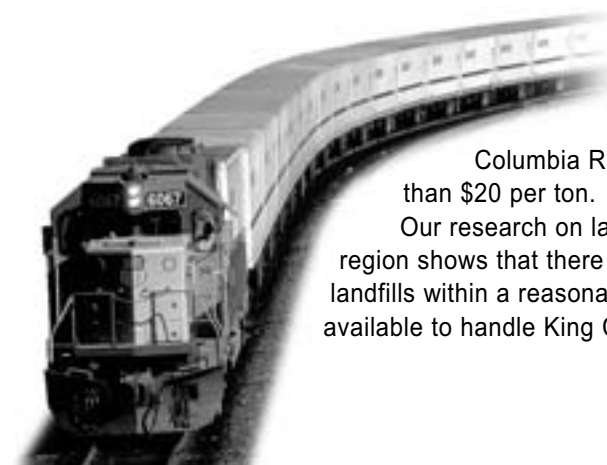
In adopting the Plan, the County Council also directed the Division to begin preparing now for the eventual implementation of waste export so that the transition will be smooth and efficient. The Division is developing a waste export implementation and coordination plan that will be transmitted to the Council by March 31, 2003. The implementation and coordination plan will act as the blueprint for the transition to waste export. The plan will:

- Re-evaluate the cost effectiveness of early waste export options;
- Address how to phase in waste export services;
- Evaluate financial and staffing impacts;
- Identify future rail capacity needs;
- Discuss transfer station upgrades and improvements;
- Contain operation and location criteria for any new transfer facilities that may need to be built;
- Discuss permitting requirements and timelines associated with waste export; and
- Identify opportunities for coordinating export operations with other regional jurisdictions.

Solid Waste Projections

Solid waste forecasts are a critical tool used in the Division's operation. They are necessary for long-range planning of transfer and disposal systems, preparing annual budgets, setting disposal rates, and measuring the effectiveness of waste reduction and recycling programs.

The Division uses an econometric model to forecast future waste tonnage. The econometric model relates historical data on recycling and disposal to historical data on economic, demographic, and policy variables that affect

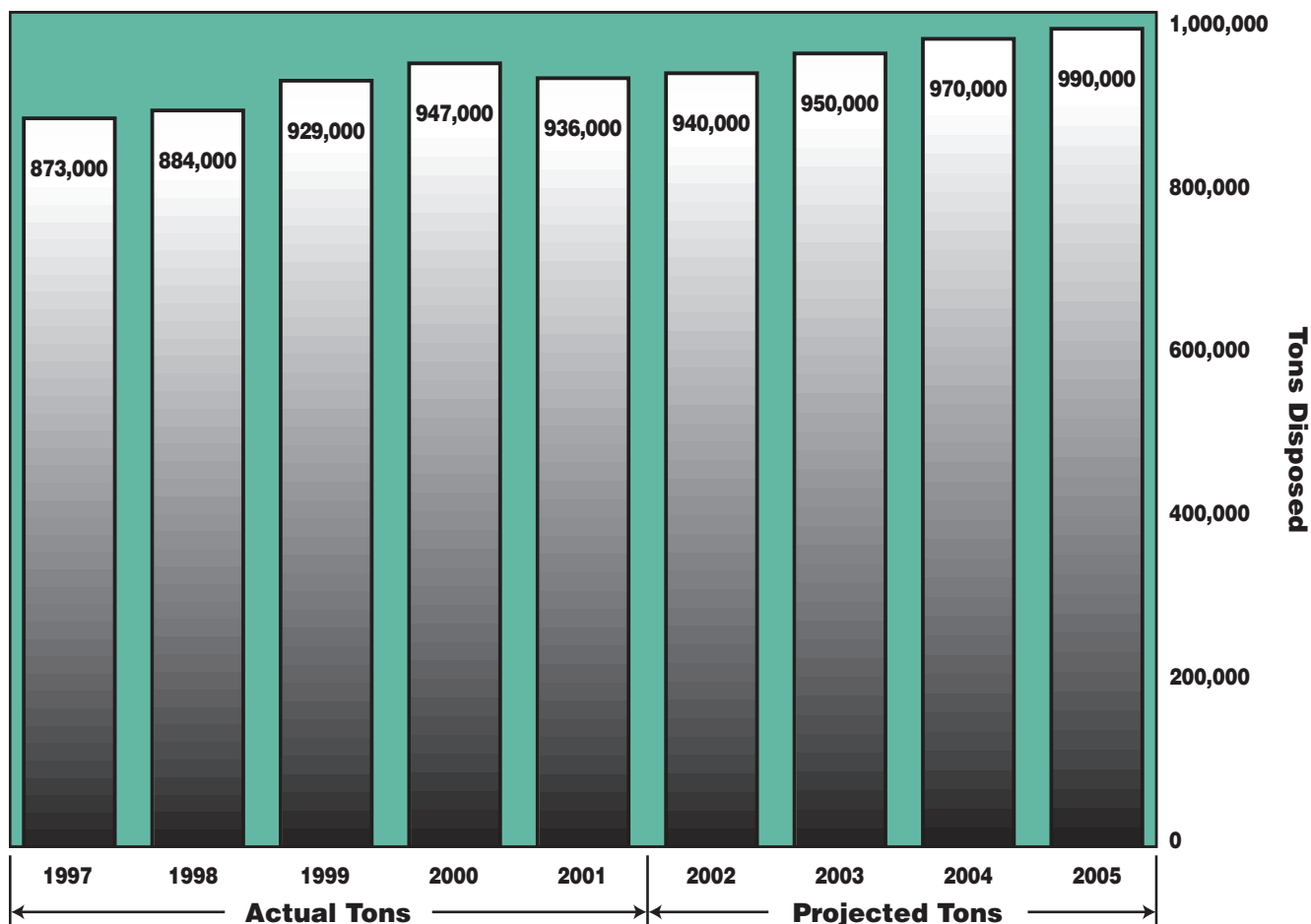


recycling and disposal. Some of the variables used in the model include the disposal tip fee, per capita income, employment, household size, and population.

In 2001, 936,300 tons of solid waste was disposed in the Cedar Hills Landfill - a drop of 12,000 tons (1.3%) from 2000 tonnage. Data through May 2002 show tonnage is up by 1% compared with the same period in 2001. One explanation for the drop in tonnage in 2001 is the current recession. In a recession people generate less garbage because they spend less. The Puget Sound region, and King County

especially, were hit hard by the recession. Boeing layoffs, the burst of the dot-com bubble and a significant reduction of the construction workforce are factors that hiked the unemployment rate up to 7% and shrunk employment by 2.6%. Population increased by 1.2% from 2000 to 2001 and personal income grew by only 0.8%. Consumer spending and house sales have remained, however, at record levels and together with a modestly growing population are contributing to the forecasted increases of garbage to be generated and disposed over the coming years. ■■■■

Tons Disposed Through 2005



Appendix

The following appendix tables provide 2001 solid waste reference data.

Table A-1. 2000 Population and Housing Data⁽¹⁾

Jurisdiction	Population	Single Family Units	Multi-Family Units	Mobile Home
Unincorporated	349,773	106,420	20,328	9,258
Incorporated	823,887	192,545	140,644	10,876
Total	1,173,660	298,965	160,972	20,134

(1) Sources: 2001 King County Annual Growth Report, 2000 U.S. Census

Table A-2. Estimated Single-Family (1-4 units) Curbside Collection—Service Subscribers

Area	Curbside Garbage and Recycling ⁽²⁾	Curbside Yard Waste
Unincorporated	85,253	32,407
Incorporated	175,685	106,564
Total	260,938	138,971

(2) All garbage customers have also been counted as recycling customers

Table A-3. Estimated Single-Family (1-4 units) Curbside Collection—Average Pounds/Month

Area	Pounds Per Household Per Month		
	Garbage	Recycling	Yard Waste
Unincorporated	135	69	139
Incorporated	124	63	109
Average	130	66	124

Table A-4. 2001 Estimated Curbside Residential and Non-Residential Recycling Tonnage⁽³⁾

Type	Mixed Paper	News Print	Card-board	Glass	Tin & Steel	Alum.	Plastic	Polycoated Paper	Yard Waste	Total
Residential										
Unincorp.	17,551	7,800	2,008	5,872	906	388	791	18	27,055	62,390
Incorp.	33,576	15,166	3,976	10,059	1,433	688	1,358	9	70,134	136,399
Subtotal	51,127	22,966	5,984	15,931	2,339	1,077	2,149	27	97,189	198,789
Non-Residential⁽⁴⁾										
Unincorp.	3,327	290	1,170	280	24	156	49	1	1,144	6,442
Incorp.	17,086	1,401	16,374	1,671	355	735	462	5	5,062	43,150
Subtotal	20,413	1,691	17,544	1,951	379	891	511	6	6,206	49,592
Grand Total	71,540	24,657	23,528	17,882	2,718	1,968	2,660	34	103,395	248,381

(3) Some of the recycling data has been estimated because all data for 2001 has not been reported yet. (4) Non-residential data includes data submitted to the County by the commercial haulers. It does not include recycling numbers from independent haulers and, therefore, may be under-reported.

Table A-5. 2001 Transfer Station and Dropbox Refuse Tonnage Disposed

Facility	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
Factoria	31,657	34,374	35,733	31,583	133,347
Houghton	40,023	43,360	43,835	42,751	169,969
Renton	9,645	10,745	17,165	16,964	54,519
Algona	25,617	26,234	29,981	32,639	114,471
Bow Lake	30,017	33,367	35,806	32,147	131,337
First Northeast	12,734	15,938	16,283	13,950	58,905
Enumclaw	4,858	5,519	6,157	5,268	21,802
Vashon	1,923	2,170	2,426	1,930	8,449
Cedar Falls Dropbox	821	1,013	1,173	856	3,863
Skykomish ⁽¹⁾	117	209	367	172	865
Earthquake Emergency Usage	196	0	0	0	196
Total	157,491	172,720	188,559	178,088	696,858

(1) Skykomish dropbox refuse is delivered to the Houghton transfer station and is included in figures for Houghton

Table A-6. 2001 Total Tonnage Disposed

System Origin	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
Transfer System	157,296	172,719	188,559	178,090	696,664
Cedar Hills Regional Direct	55,852	63,375	57,236	46,201	222,664
Cedar Hills Other Waste	4,192	3,856	4,270	4,664	16,982
Earthquake Emergency Usage	196	0	0	0	196
Total Cedar Hills Disposal	217,536	239,950	250,065	228,955	936,506
Yard Waste Recycled	194	406	404	171	1,175

Table A-7. 2001 Transfer Station Disposal by Customer Type

Transfer Station	— SELF HAUL CUSTOMERS —		— COLLECTION COMPANIES —	
	Tons Disposed	% of Total	Tons Disposed	% of Total
Factoria	28,838	22%	103,627	78%
Houghton	30,391	18%	138,739	82%
Renton	14,795	27%	39,271	73%
Algona	29,003	25%	85,219	75%
Bow Lake	28,902	22%	100,424	78%
First NE	31,755	54%	27,319	46%
Enumclaw	11,267	52%	10,481	48%
Vashon	5,614	69%	2,487	31%
Cedar Falls Drop Box	3,921	100%	0	0%
Total	184,485	27%	507,567	73%

Table A-8. 2001 Transfer Station Transactions by Customer Type

Transfer Station	— SELF HAUL CUSTOMERS —		— COLLECTION COMPANIES —	
	Transactions	% of Total	Transactions	% of Total
Factoria	100,315	85%	17,735	15%
Houghton	104,883	81%	25,338	19%
Renton	65,941	92%	6,022	8%
Algona	119,171	88%	16,696	12%
Bow Lake	100,578	83%	20,463	17%
First Northeast	112,483	96%	4,953	4%
Enumclaw	47,448	96%	1,866	4%
Vashon	22,244	98%	422	2%
Cedar Falls Drop Box	20,193	100%	0	0%
Total	693,256	88%	93,495	12%

Table A-9. 2001 Transfer Station and Drop-box Recycling Tonnage

Site	Mixed Paper	Newspaper	Cardboard	T-A-P-G ⁽²⁾	Total
Factoria	163	24	135	54	376
Houghton	223	60	260	105	648
Renton	394	—	209	168	771
Bow Lake	401	—	269	177	847
First NE	420	—	339	232	991
Enumclaw	196	156	104	231	687
Vashon	288	—	116	426	830
Cedar Falls	170	—	119	95	384
Skykomish	9	—	3	17	29
Snoqualmie	15	—	16	16	47
Grand Total	2,279	240	1,570	1,521	5,610

(2) T-A-P-G = Tin, Aluminum, Plastic, Glass

Table A-10. Total Refuse Tonnage Disposed, 1980-2000

Year	Rural Landfills	Transfer Stations	Cedar Hills Reg. Direct	Cedar Hills Other Waste	Total Disposed
1980	54,827	460,577	218,560	35,756	769,720
1981	44,280	509,680	244,417	50,755	849,132
1982	33,890	519,931	213,715	24,943	792,479
1983	32,318	498,643	206,691	9,566	747,218
1984	33,649	527,522	256,459	10,512	828,142
1985	36,862	568,342	268,795	13,592	887,591
1986	39,053	624,247	272,485	22,345	958,130
1987	36,979	681,472	595,058	28,165	1,341,674
1988	38,655	667,651	556,247	39,954	1,302,507
1989	41,614	712,156	476,602	55,462	1,285,834
1990	44,290	848,439	483,950	58,105	1,432,869
1991	28,553	814,919	258,319	53,014	1,181,969
1992	23,656	770,448	119,340	21,317	933,489
1993	21,020	716,437	144,973	24,740	901,217
1994	10,288	633,408	150,400	22,422	814,384
1995	7,388	642,498	146,024	26,610	822,520
1996	7,766	594,736	190,790	23,740	817,602
1997	8,110	607,256	229,007	24,448	872,384
1998	8,228	626,874	226,617	22,005	883,724
1999	3,949	692,921	214,422	18,015	929,307
2000	0	711,565	216,169	19,440	947,174
2001	0	696,664	222,664	16,982	936,506

Table A-11. 2001 Program Inquiries by Type

Phone Inquiries	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total
Composting/Recycling	918	847	842	863	3,470
City of Seattle referrals	523	427	476	405	1,831
Special Collection Events	94	328	396	131	949
Complaints	0	5	15	10	30
Hauler Complaints	0	64	39	41	144
Customer Service*	2,820	3,167	3,295	2,693	11,975
TreeCycling	392	0	0	129	521
Mower Events	233	233	0	0	466
Compost Bin Event	18	695	0	0	713
Computer Recovery Project	88	158	111	119	476
Compost Sale Event	0	0	3	0	3
Total	5,086	5,924	5,177	4,391	20,578
Home Page Inquiries (e-mail)	275	353	182	186	996

*Customer Service includes inquiries such as: directions to transfer stations, rates, hours, acceptance of materials, how to get collection service, what hauler serves a particular area, etc

Chart A-1
Solid Waste Division
Actual Revenues
and Expenditures.
Update for year
ending 12/31/2001

Manager/ Administration	Waste Reduction & Recycling and Mod. Risk Waste	<ul style="list-style-type: none"> · Education · Technical and financial assistance · Collection services 	Expenditure \$7,357,073 18 FTEs	Revenue Disposal fees.....\$4,181,126 Haz. waste sur-charge.....\$2,904,031 Uninc. household fees.....\$271,916
	Landfill Operations	<ul style="list-style-type: none"> · Operate and maintain active & closed landfills · Landfill and equip. replacement transfer 	Expenditure \$18,157,044 45 FTEs	Revenue Disposal fees.....\$16,424,320 Interest.....\$1,732,724
	Transfer Station Operations	<ul style="list-style-type: none"> · Operate transfer facilities · Collect fees · Monitor waste · Equip. replacement transfer 	Expenditure \$8,046,536 88 FTEs	Revenue Disposal fees.....\$8,000,482 Rent.....\$46,054
	Transportation Operations	<ul style="list-style-type: none"> · Transport garbage to landfill · Haul leachate & maintenance material · Equip. replacement transfer 	Expenditure \$5,618,620 68 FTEs	Revenue Disposal fees.....\$5,618,620
	Maintenance Operations	<ul style="list-style-type: none"> · Maintain facilities and equipment · Procure and control inventory 	Expenditure \$6,831,310 60 FTEs	Revenue Disposal fees.....\$6,789,917 Ecology Grants.....\$41,393
	Operations Administration	<ul style="list-style-type: none"> · Maintenance planning for operations functions 	Expenditure \$989,738 12 FTEs	Revenue Disposal fees.....\$989,738
	Capital Facilities ⁽¹⁾	<ul style="list-style-type: none"> · Plan & execute capital projects · Environmental monitoring · Operations support 	Expenditure ⁽²⁾ \$8,810,228 36 FTEs	Revenue Disposal fees.....\$8,181,982 CDL fees ⁽⁴⁾\$628,246
	Debt Service		Expenditure \$8,251,645 0 FTEs	Revenue Disposal fees.....\$8,251,645
	Planning & Communications	<ul style="list-style-type: none"> · Develop comprehensive plans, analyze programs · Public involvement 	Expenditure \$1,285,133 12 FTEs	Revenue Disposal fees.....\$1,006,873 Grants.....\$278,260
	Administration & Fiscal Services	<ul style="list-style-type: none"> · Manage fiscal functions · Administer customer service · Personnel functions · Payroll 	Expenditure \$10,173,180 48 FTEs	Revenue Disposal fees.....\$9,240,256 Interest.....\$805,030 Other.....\$127,894

Summary of 2000 Actual Activity
 2000 Total Revenues.....\$79,619,643
 Fund Balance Added.....\$ 4,099,136
 2001 Total Operating Expenditures.....\$75,520,507
 2001 Total Employees.....387 FTEs

(1) Operating portion only of capital facilities budget; does not include debt-financed design/construction costs.
 (2) Includes payments for legal settlements.

(3) LRF=Landfill Reserve Fund
 (4) Supports Construction, Demolition and Landclearing Program costs in Engineering Section.

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